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**United States Patent** [19]**Toppo**[11] **Patent Number:** **5,318,960**[45] **Date of Patent:** **Jun. 7, 1994****[54] SYSTEM FOR TRANSDERMAL DELIVERY  
OF PAIN RELIEVING SUBSTANCES****[75] Inventor:** **Frank Toppo**, 1 Corporate Park,  
Suite 100, Irvine, Calif. 92714**[73] Assignee:** **Frank Toppo**, Las Vegas, Nev.**[21] Appl. No.:** **893,011****[22] Filed:** **Jun. 3, 1992****[51] Int. Cl.<sup>5</sup> ..... A61K 31/60****[52] U.S. Cl. .... 514/159; 514/165;**  
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514/567; 514/569; 514/570; 514/627; 514/648;  
514/772; 514/941; 514/975**[58] Field of Search ..... 514/570, 648, 627, 350,**  
514/159, 772, 941, 975, 249, 165, 569, 404,  
226.5, 420, 567, 423, 313, 562, 356**[56] References Cited****U.S. PATENT DOCUMENTS**

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**OTHER PUBLICATIONS**Baumann et al., *Medline*, No. 92014210, 1991.Furukawa et al., *Chemical Abstracts*, vol. 109(18), No. 156263t, 1988.*Primary Examiner*—Marianne M. Cintins*Assistant Examiner*—William R. A. Jarvis*Attorney, Agent, or Firm*—Charles H. Thomas**[57] ABSTRACT**

Compositions for pain relieving non-steroidal anti-inflammatory drugs and/or medicaments such as ibuprofen, methotrexate, capsaicin, diphenhydramine, aspirin, methyl nicotinate and other medicaments largely soluble in oil, alcohol, and/or water, are produced for transdermal delivery. The composition is manufactured by admixing an appropriate amount of oil surfactant with an appropriate amount of pharmaceutically approved co-solubilizer alcohol to establish a non aqueous phase. The oil surfactant may be a polyethoxylated oil such as castor oil. The co-solubilizer may be isopropyl alcohol or virtually any other alcohols except for methanol. Thereafter, an appropriate amount of distilled water is slowly added to the homogeneous or non-aqueous phase to further reduce viscosity. The final admixture is a clear, oil-continuous solution having a viscosity no greater than 850 centistokes as measured by the VST Hopper method at 25 degrees Celsius. The composition produced has the capacity to affect the individual surface skin cells (corneocytes) and allow the passage of medicaments to sub-dermal afflicted areas deep within the skin.

**26 Claims, No Drawings**